

## CLAIMS

1. An imaging system comprising:

a display monitor;

an operator interface comprising a multiplicity  
of control input devices for setting respective image  
processing parameters;

a scanning subsystem for acquiring raw data; and

an image processing system for processing  
acquired raw data to display an image frame of imaging data  
on said display monitor, said image processing system  
comprising memory for storing values of image processing  
parameters and a computer programmed to perform the  
following steps:

controlling said display monitor to display a  
first image frame of imaging data processed in accordance  
with values of first and second image processing parameters  
stored in said memory prior to display of said first image  
frame;

monitoring the state of said control input  
devices, during a predetermined time period, to detect a  
change in state of a control input device that results in  
said image processing system generating a changed value of  
said first image processing parameter different than said  
stored value of said first image processing parameter;

controlling said display monitor to display a  
second image frame of imaging data processed in accordance  
with said changed value of said first image processing  
parameter, said first and second image frames being based  
on the same acquired raw data; and

storing said changed value of said first image  
processing parameter in said memory.

2. The imaging system as recited in claim 1, wherein said control input device having said changed state controls the value of said second image processing parameter.

5           3. The imaging system as recited in claim 2, wherein the contrast in said displayed image frames is a function of at least said first and second image processing parameters.

10           4. The imaging system as recited in claim 1, wherein said first image processing parameter is a gray-scale level.

15           5. The imaging system as recited in claim 4, wherein said computer is further programmed to generate a gray map as a function of a stored changed value of said gray-scale level.

            6. The imaging system as recited in claim 4, wherein said computer is further programmed to generate a gray map as a function of an average of a multiplicity of stored changed values of said gray-scale level.

20           7. The imaging system as recited in claim 3, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is dynamic range.

25           8. The imaging system as recited in claim 3, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is gain.

30           9. The imaging system as recited in claim 3, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is gray map selection.

10. The imaging system as recited in claim 4, wherein said changing step comprises the steps of generating and analyzing a pixel intensity histogram of the imaging data in said second image frame.

5 11. The imaging system as recited in claim 1, wherein said computer is further programmed to store said changed value of said first image processing parameter in association with a system user ID inputted via said operator interface.

10 12. The imaging system as recited in claim 11, wherein said computer is further programmed to store an application type or exam type in association with said changed value of said first image processing parameter and said system user ID.

15 13. The imaging system as recited in claim 11, wherein said computer is further programmed to control said display monitor to display a message, prior to said storing step, requesting confirmation from the system user that said changed value of said first image processing parameter  
20 should be stored.

14. An imaging system comprising:

a display monitor;

an operator interface comprising a multiplicity  
of control input devices for setting respective image  
25 processing parameters;

a scanning subsystem for acquiring raw data; and

an image processing system for processing  
acquired raw data to display an image frame of imaging data  
on said display monitor, said image processing system  
30 comprising memory for storing values of image processing  
parameters and a computer programmed to perform the

following steps:

controlling said display monitor to display a first image frame of imaging data processed in accordance with values of first and second image processing parameters stored in said memory prior to display of said first image frame;

monitoring the state of said control input devices, during a predetermined time period, to detect a change in state of a control input device that results in said image processing system generating a changed value of said first image processing parameter different than said stored value of said first image processing parameter;

controlling said display monitor to display a second image frame of imaging data processed in accordance with said changed value of said first image processing parameter, said first and second image frames being based on the same acquired raw data; and

storing in said memory a new value of said first image processing parameter which is a function of at least said changed value of said first image processing parameter.

15. The imaging system as recited in claim 14, wherein said new value of said first image processing parameter is an average of a plurality of values, said plurality including at least said changed value of said first image processing parameter and said stored value of said first image processing parameter.

16. The imaging system as recited in claim 14, wherein said control input device having said changed state controls the value of said second image processing parameter.

17. The imaging system as recited in claim 16, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is taken from the group consisting of dynamic range, gain and gray map selection.

18. The imaging system as recited in claim 14, wherein said computer is further programmed to store a system user ID in association with said new value of said first image processing parameter.

19. A method of operating an imaging system comprising a display monitor, a scanning system, a memory, and an operator interface, comprising the steps of:

storing values of image processing parameters in memory;

scanning an object to acquire raw data;

displaying a first image frame of imaging data processed in accordance with values of first and second image processing parameters stored in said memory prior to display of said first image frame;

changing the state of a control input device of said operator interface;

generating a changed value of said first image processing parameter different than said stored value of said first image processing parameter as a result of said change in state of said control input device;

displaying a second image frame of imaging data processed in accordance with said changed value of said first image processing parameter, said first and second image frames being based on the same acquired raw data; and

storing said changed value of said first image processing parameter in said memory.

20. The method as recited in claim 19, wherein said control input device having said changed state controls the value of said second image processing parameter.

5           21. The method as recited in claim 20, wherein the contrast in said displayed image frames is a function of at least said first and second image processing parameters.

10           22. The method as recited in claim 21, wherein said first image processing parameter is a gray-scale level, further comprising the step of generating a gray map as a function of a stored changed value of said gray-scale level.

15           23. The method as recited in claim 21, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is taken from the group consisting of dynamic range, gain and gray map selection.

20           24. The method as recited in claim 19, further comprising the step of storing a system user ID in association with said changed value of said first image processing parameter.

25           25. A method of operating an imaging system comprising a display monitor, a scanning system, a memory, and an operator interface, comprising the steps of:

storing values of image processing parameters in memory;

scanning an object to acquire raw data;

30           displaying a first image frame of imaging data processed in accordance with values of first and second image processing parameters stored in said memory prior to

display of said first image frame;

changing the state of a control input device of said operator interface;

5 generating a changed value of said first image processing parameter different than said stored value of said first image processing parameter as a result of said change in state of said control input device;

10 displaying a second image frame of imaging data processed in accordance with said changed value of said first image processing parameter, said first and second image frames being based on the same acquired raw data; and

15 storing in said memory a new value of said first image processing parameter which is a function of at least said changed value of said first image processing parameter.

26. The method as recited in claim 25, wherein said control input device having said changed state controls the value of said second image processing parameter.

20 27. The method as recited in claim 26, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is taken from the group consisting of dynamic range, gain and gray map selection.

25 28. The method as recited in claim 25, further comprising the step of storing a system user ID in association with said new value of said first image processing parameter.

29. An imaging system comprising:

30 an operator interface comprising a multiplicity of control input devices for setting respective image

processing parameters;

a scanning subsystem for acquiring raw data; and

memory for storing values of image processing parameters;

5 means for displaying a first image frame of imaging data processed in accordance with values of first and second image processing parameters stored in said memory prior to display of said first image frame;

10 means for generating a changed value of said first image processing parameter different than said stored value of said first image processing parameter following detection, during a predetermined time period, of a change in state of a corresponding control input device;

15 means for displaying a second image frame of imaging data processed in accordance with said changed value of said first image processing parameter, said first and second image frames being based on the same acquired raw data; and

means for writing said changed value of said first image processing parameter into said memory.

20 30. The imaging system as recited in claim 29, wherein said corresponding control input device controls the value of said second image processing parameter.

25 31. The imaging system as recited in claim 30, wherein said first image processing parameter is a gray-scale level and said second image processing parameter is taken from the group consisting of dynamic range, gain and gray map selection.

32. The imaging system as recited in claim 29, further comprising means for associating a system user ID



with said new value of said first image processing parameter.